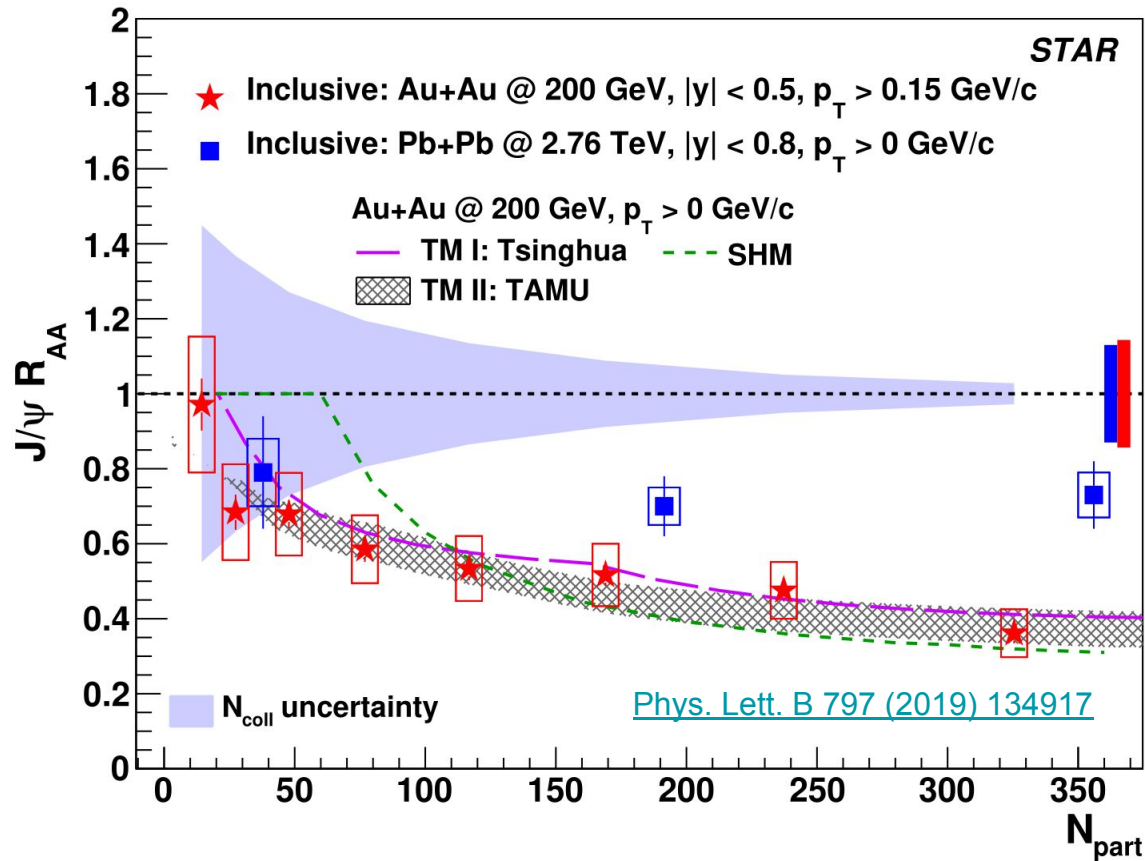


RHIC J/psi R_{AA} as $\langle N_{part} \rangle$



TM I: Tsinghua

Y.-p. Liu et al.

[Phys.Lett. B 678 \(2009\) 1](#)

TM II: TAMU

X. Zhao, R. Rapp

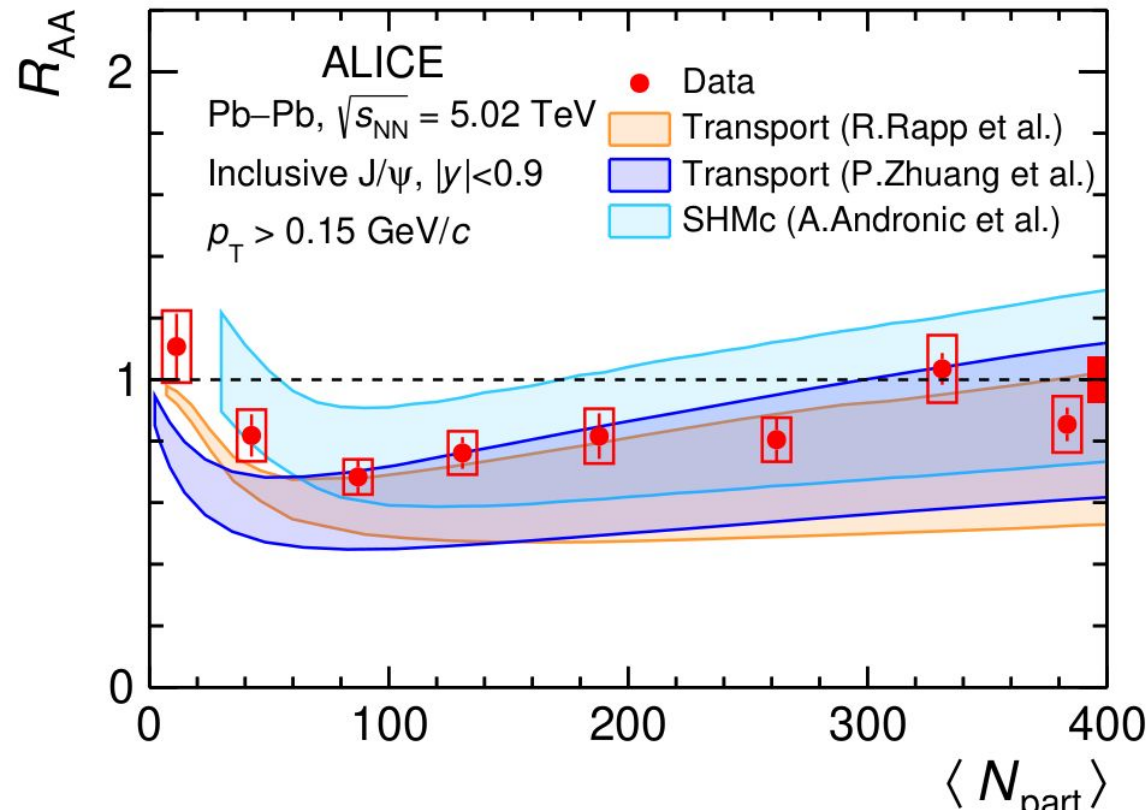
[Phys. Rev. C 82, 064905](#)

SHM

A. Andronic et al.

[Nature 561, 321–330 \(2018\)](#)

LHC J/psi R_{AA} as $\langle N_{part} \rangle$



Transport 1

X. Du and R. Rapp

[Phys. A 943 \(2015\) 147–158](#)

Transport 2

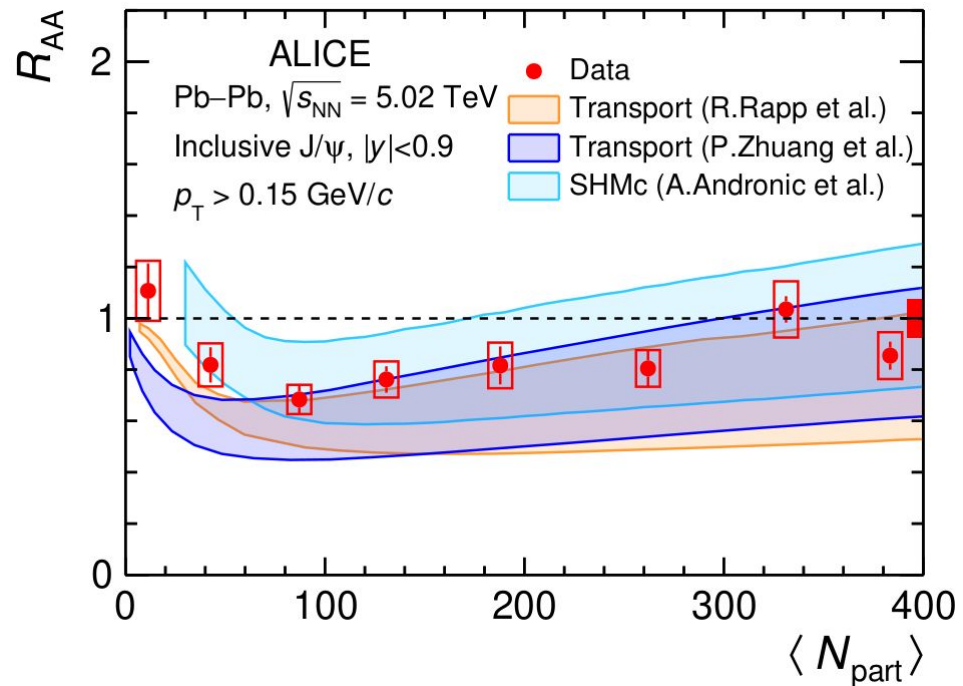
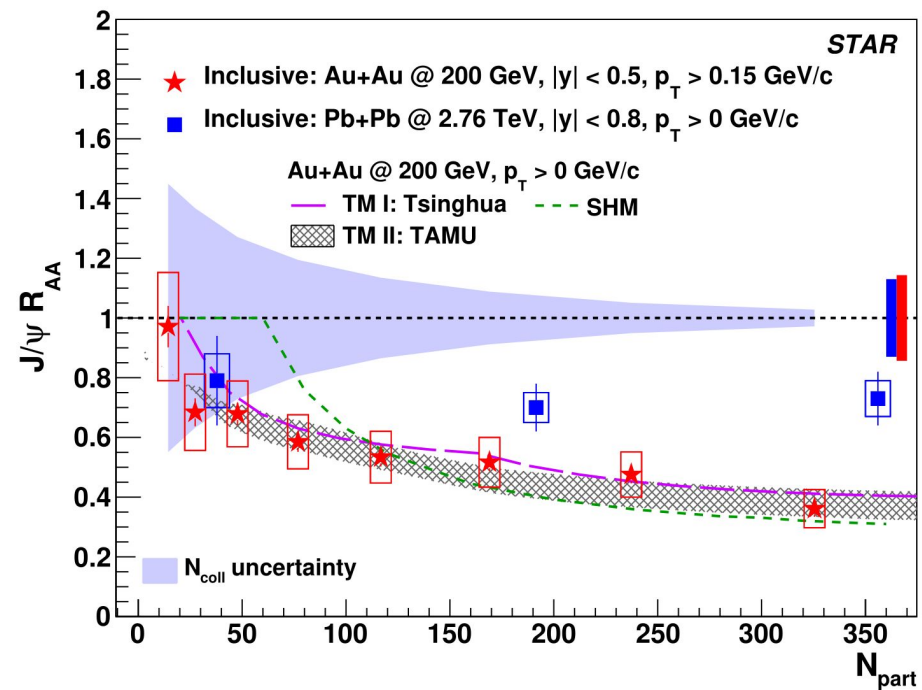
P. Zhuang et al.

[Phys. Rev. C 89 \(2014\) 054911](#)

SHMc

A. Andronic et al.

[Phys.Lett. B797 \(2019\) 134836](#)



RHIC J/psi R_{AA} as p_T

Au+Au @ 200 GeV, Inclusive J/ψ

★ STAR: J/ψ → μ⁺μ⁻, |y| < 0.5

□ Systematic uncertainty

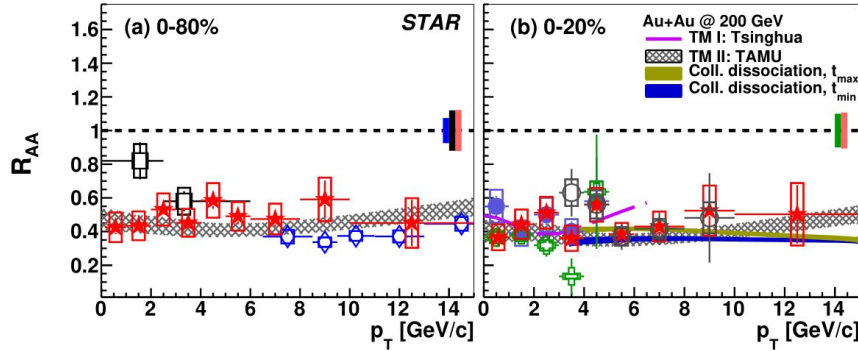
⊕ PHENIX: J/ψ → e⁺e⁻, |y| < 0.35

○ ● STAR: J/ψ → e⁺e⁻, |y| < 1

Pb+Pb @ 2.76 TeV

□ ALICE: Inclusive J/ψ, 0-40%, |y| < 0.8

◇ CMS: Prompt J/ψ, 0-100%, |y| < 2.4



TM I: Tsinghua

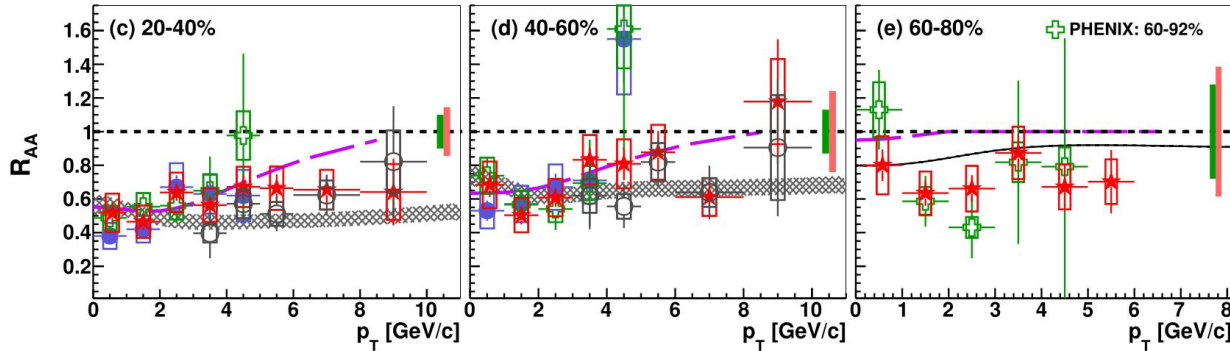
Y.-p. Liu et al.

[Phys.Lett. B 678 \(2009\) 1](#)

TM II: TAMU

X. Zhao, R. Rapp

[Phys. Rev. C 82, 064905](#)

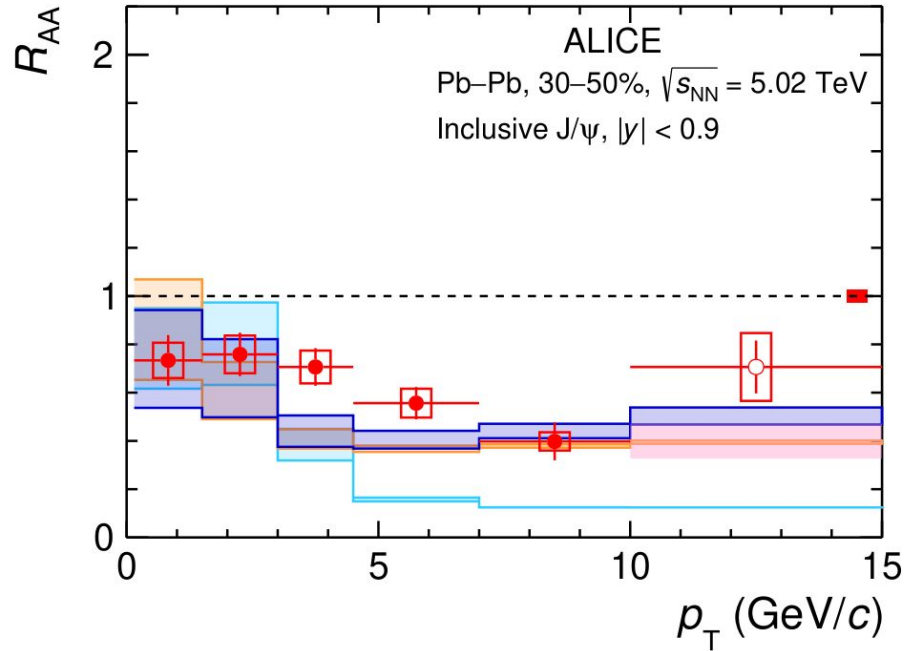
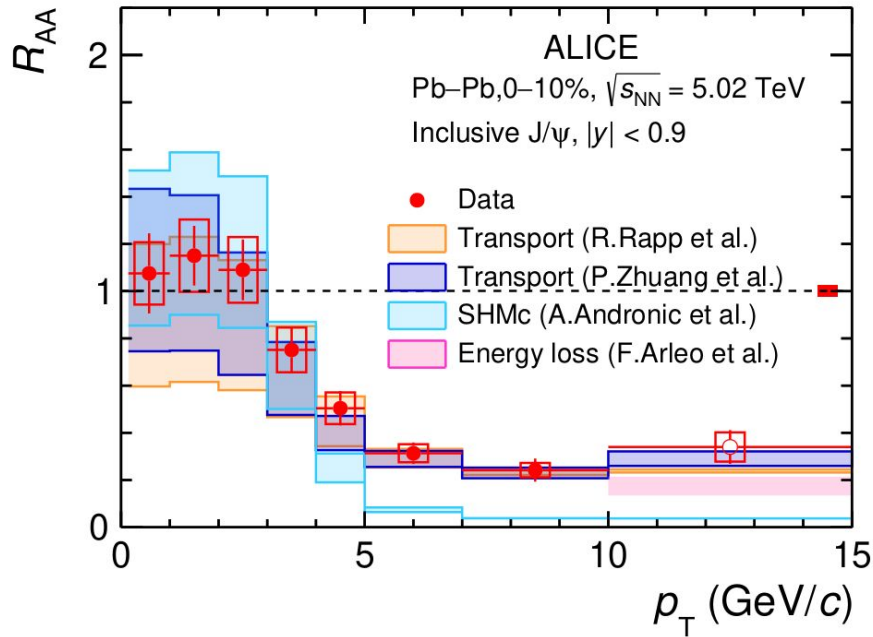


Collisional dissociation

R. Sharma, I. Vitev

[Phys. Rev. C 87, 044905](#)

[Phys. Lett. B 797 \(2019\) 134917](#)



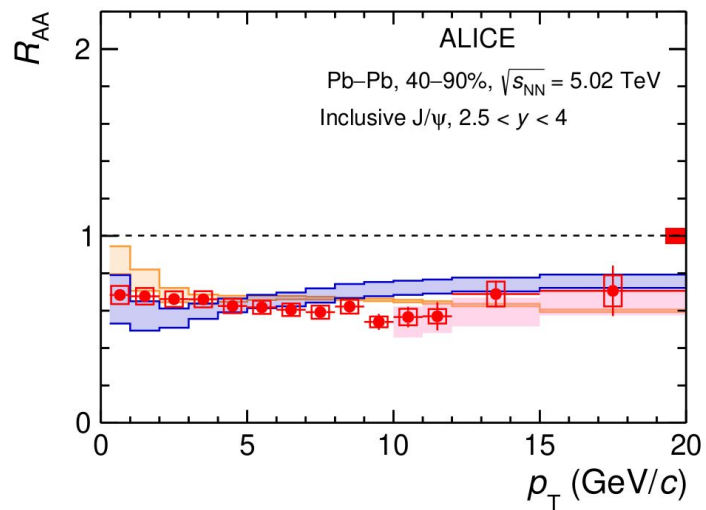
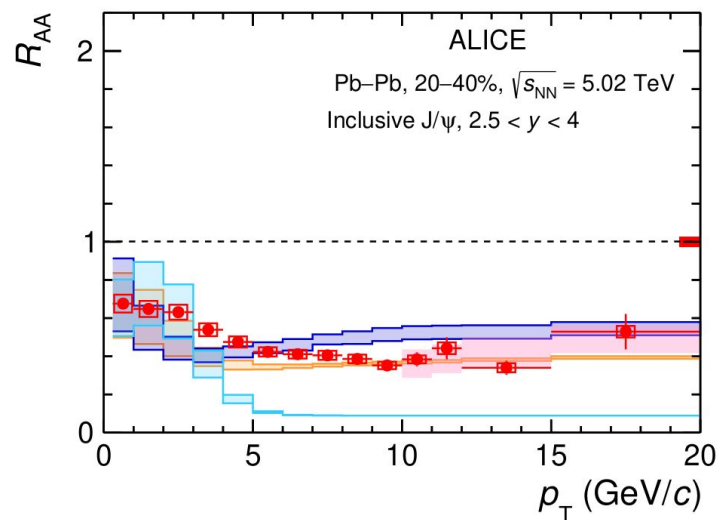
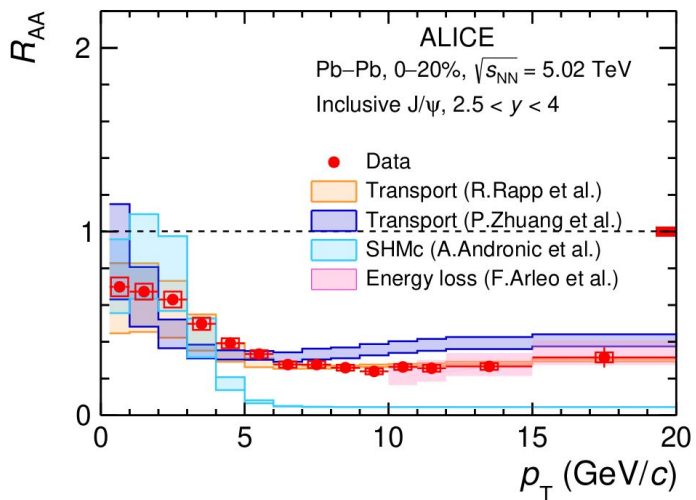
Transport 1: X. Du and R. Rapp [Phys. A 943 \(2015\) 147-158](#)

Transport 2: P. Zhuang et al. [Phys. Rev. C 89 \(2014\) 054911](#)

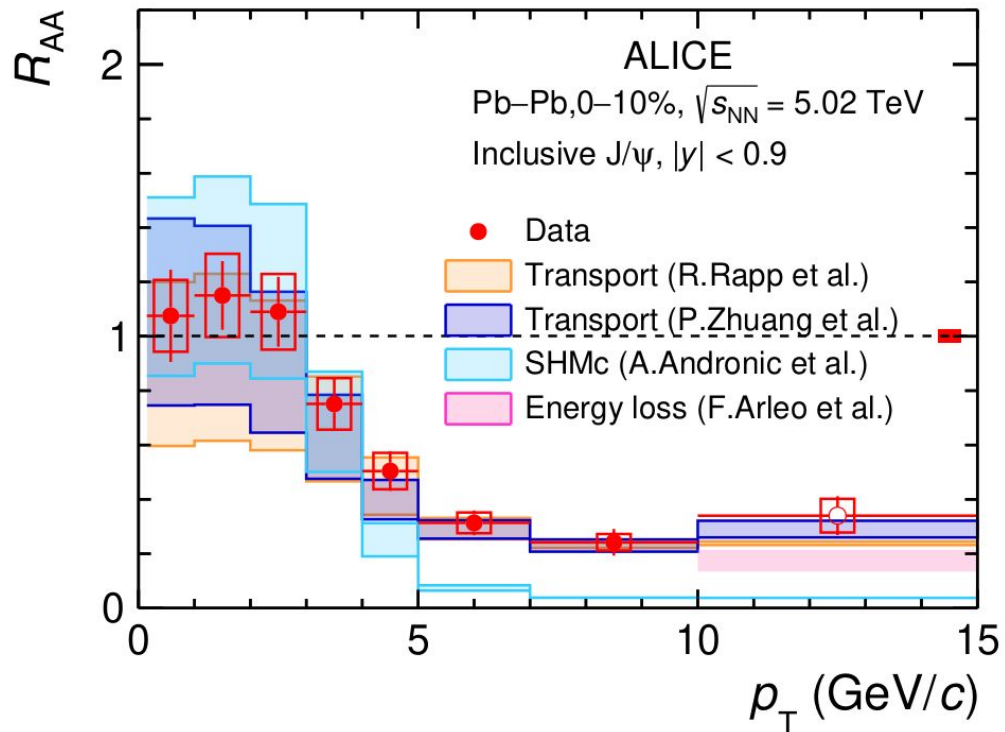
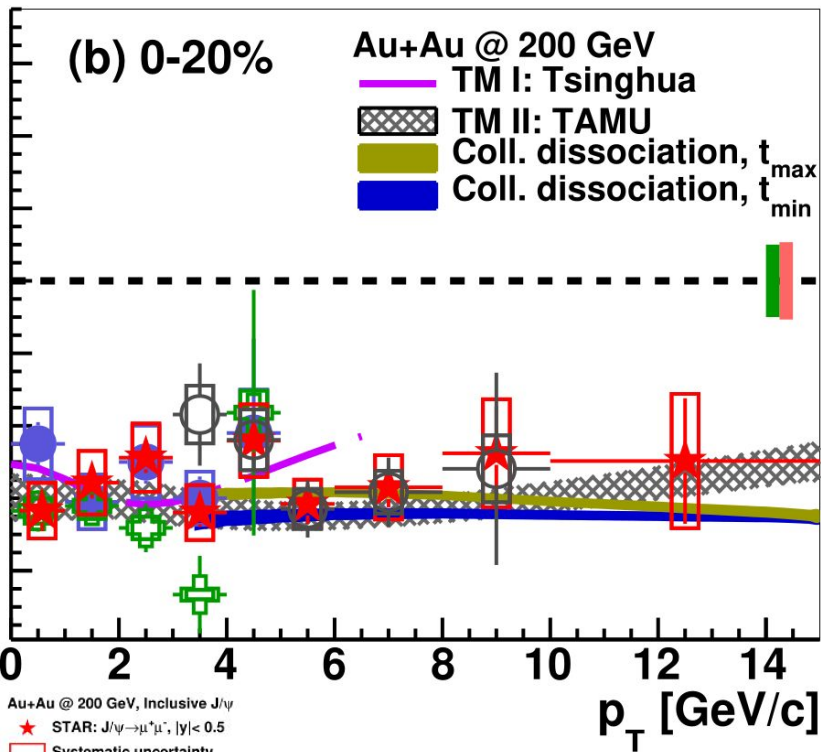
SHMc: A. Andronic et al. [Phys.Lett. B797 \(2019\) 134836](#)

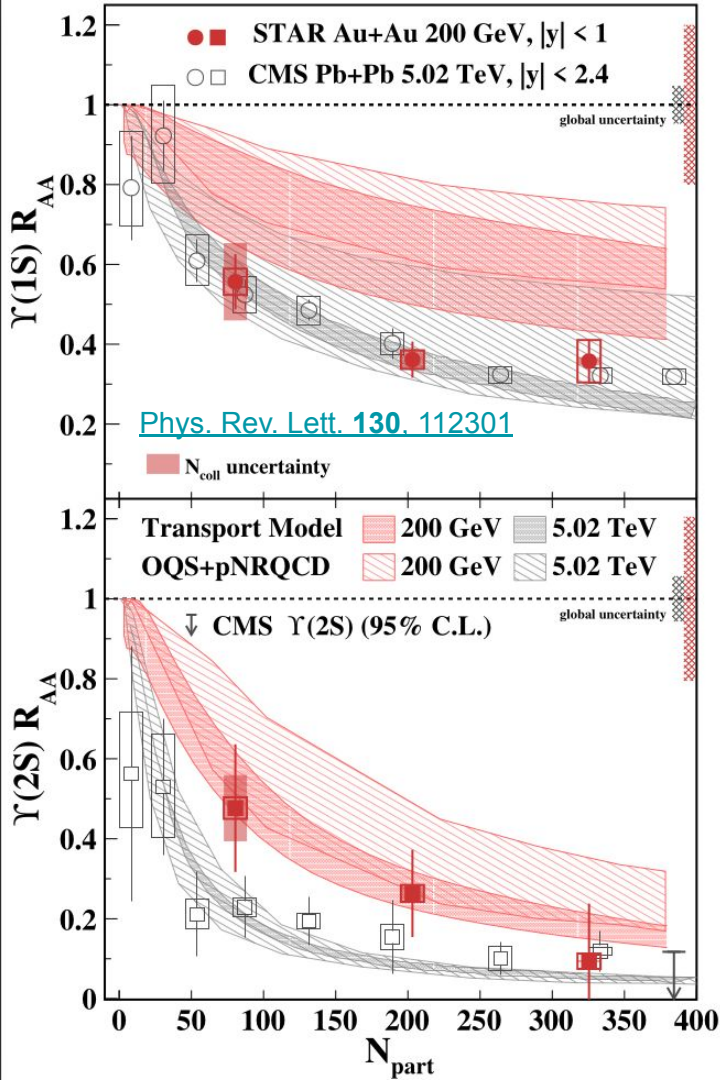
Energy loss: F. Arleo [Phys. Rev. Lett. 119 \(2017\) 062302](#)

LHC J/ ψ R_{AA} as p_T
in mid-rapidity



LHC J/psi R_{AA} as p_T
in forward rapidity





RHIC Upsilon R_{AA} as $\langle N_{part} \rangle$

Transport Model

X. Du, M. He, R. Rapp

[Phys. Rev. C 96, 054901](#)

OQS+pNRQCD

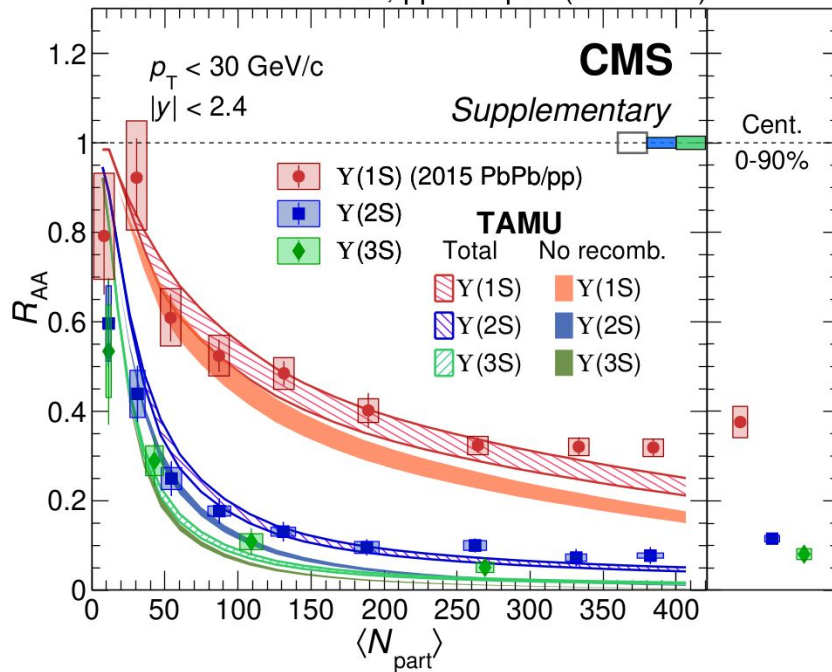
N. Brambilla et al.

[Phys. Rev. D 104, 094049](#)

[J. High Energ. Phys. 2021, 136 \(2021\)](#)

[J. High Energ. Phys. 2022, 303 \(2022\)](#)

PbPb 1.61 nb⁻¹, pp 300 pb⁻¹ (5.02 TeV)

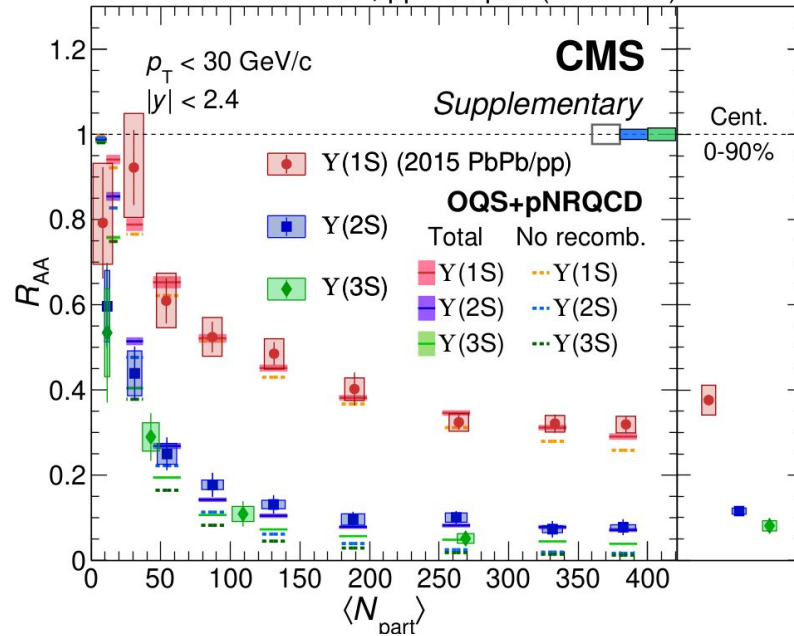


TAMU:

X. Du and R. Rapp et al.

[Phys. Rev. C 96 \(2017\) 054901](#)

PbPb 1.61 nb⁻¹, pp 300 pb⁻¹ (5.02 TeV)

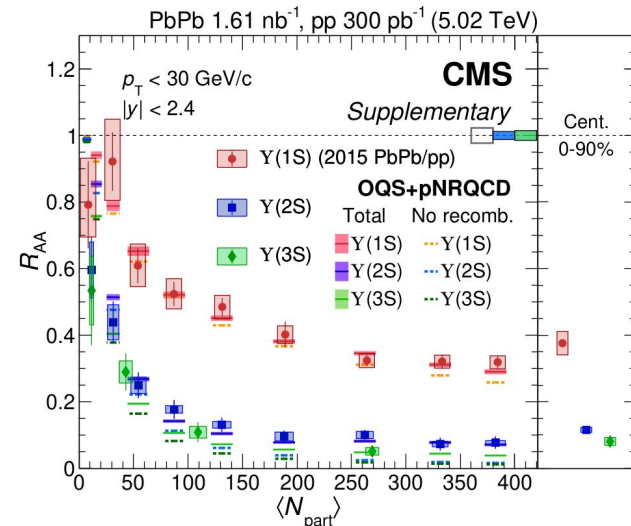
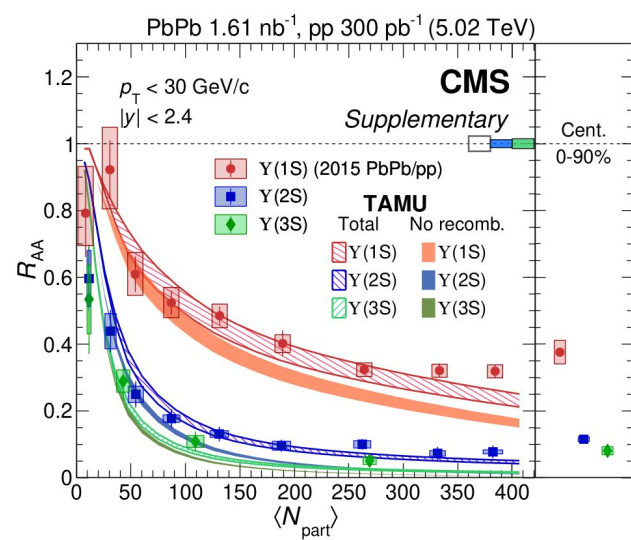
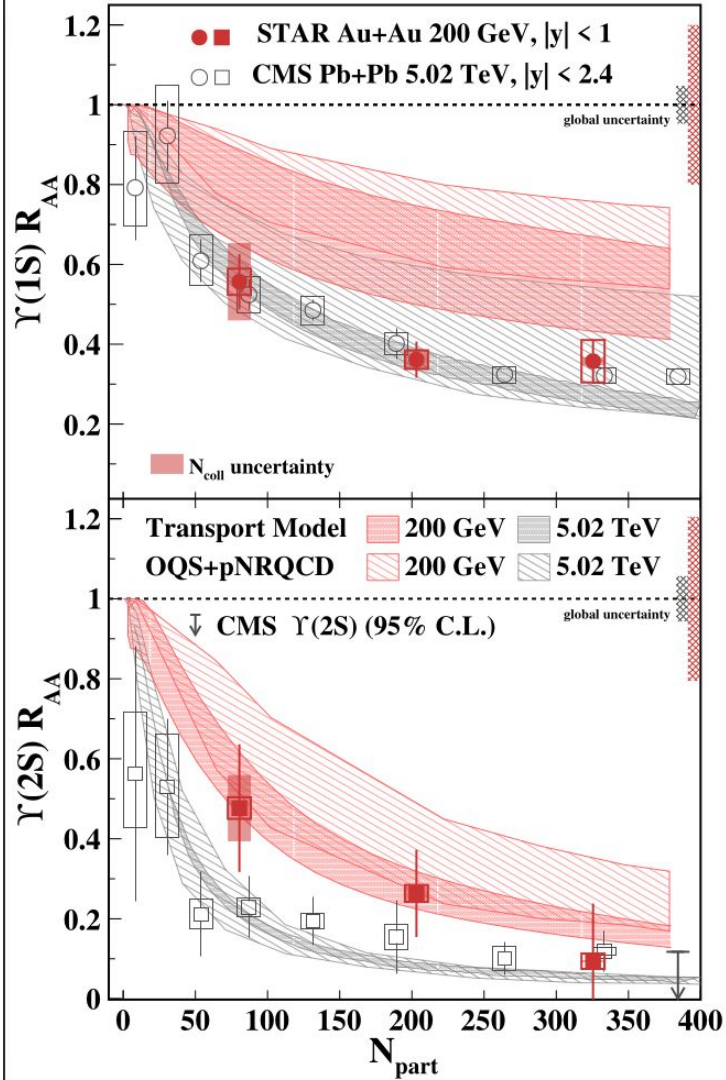


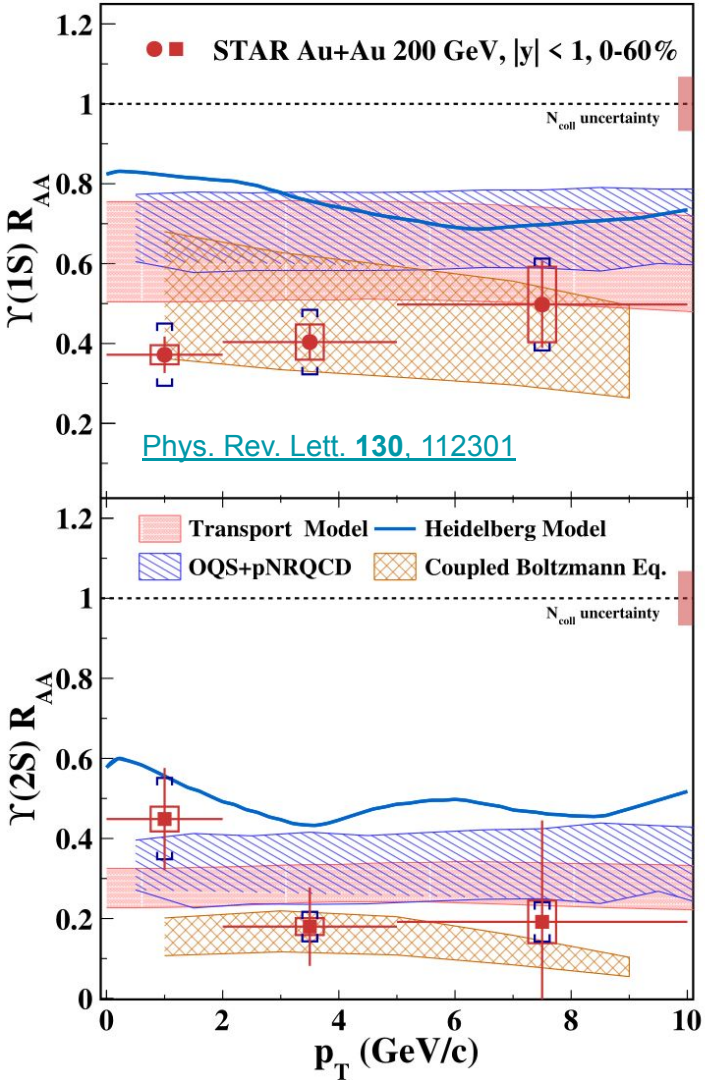
OQS+pNRQCD:

N. Brambilla et al.

[Phys. Rev. D 108 \(2023\) L011502](#)

LHC Upsilon R_{AA} as





RHIC Upsilon R_{AA} as p_T

Transport Model

X. Du, M. He, R. Rapp

[Phys. Rev. C **96**, 054901](#)

OQS+pNRQCD

N. Brambilla et al.

[Phys. Rev. D **104**, 094049](#)

[J. High Energ. Phys. **2021**, 136 \(2021\)](#)

[J. High Energ. Phys. **2022**, 303 \(2022\)](#)

Heidelberg Model

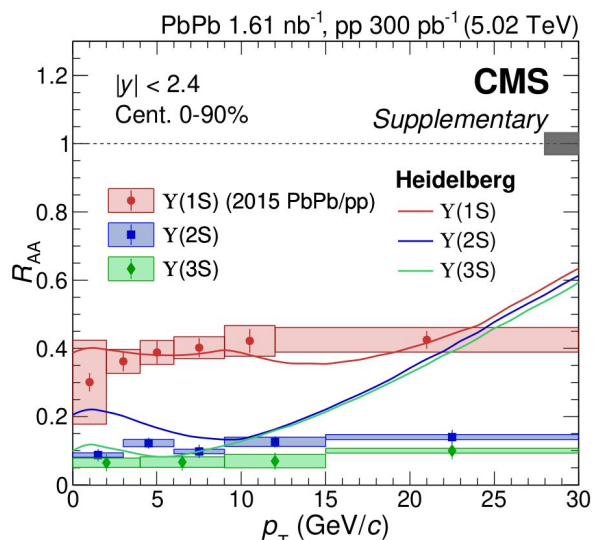
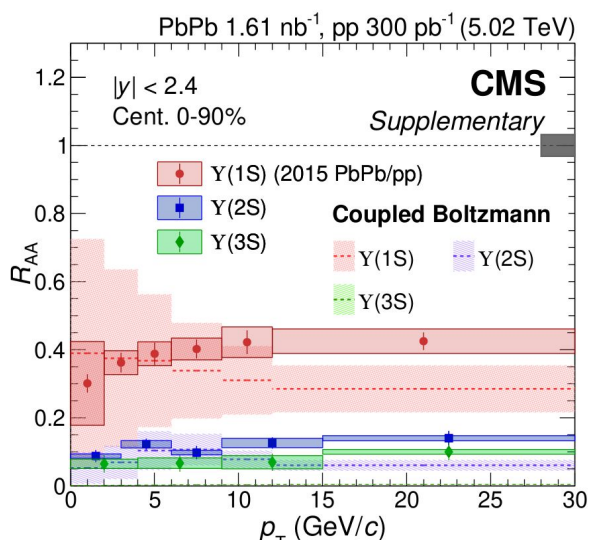
J. Hoelck, F. Nendzig, G. Wolschin

[Phys. Rev. C **95**, 024905](#)

Coupled Boltzmann Eq.

X. Yao et al.

[J. High Energ. Phys. **2021**, 46 \(2021\)](#)



Coupled Boltzmann:

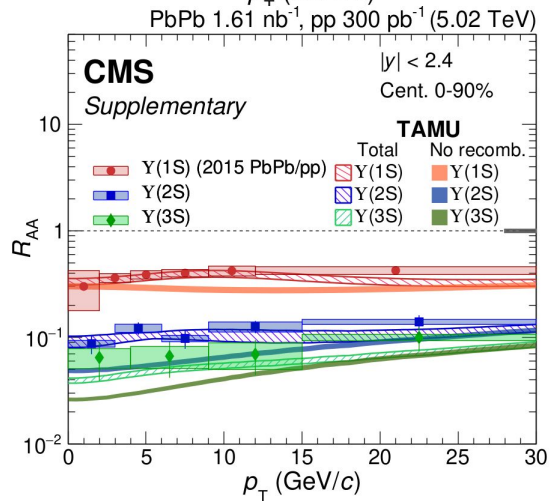
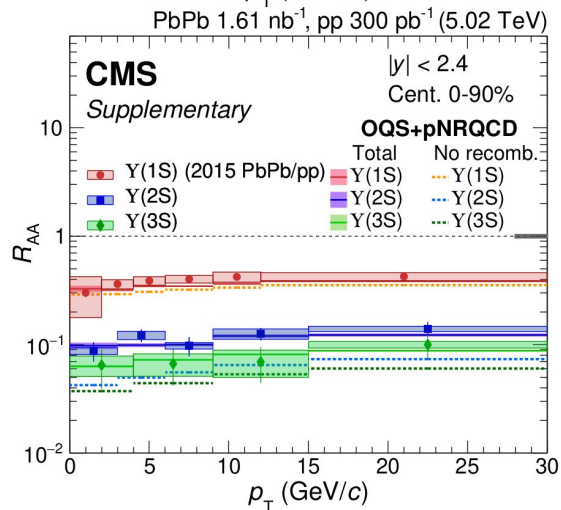
X. Yao et al.

[JHEP 01 \(2021\) 046](#)

Heidelberg:

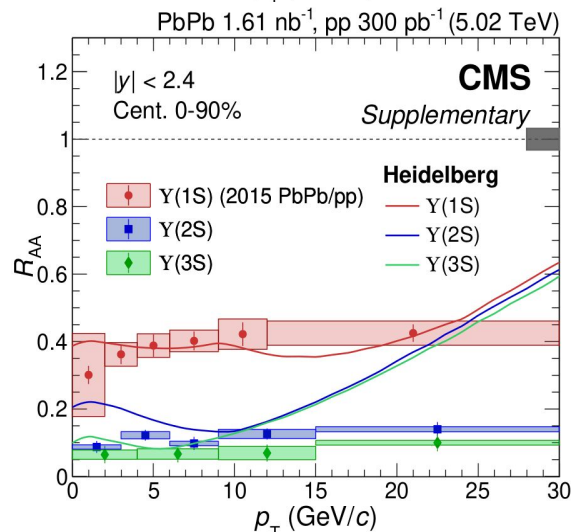
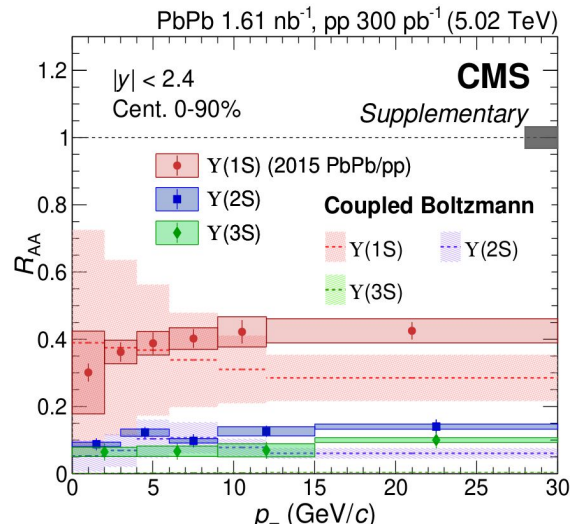
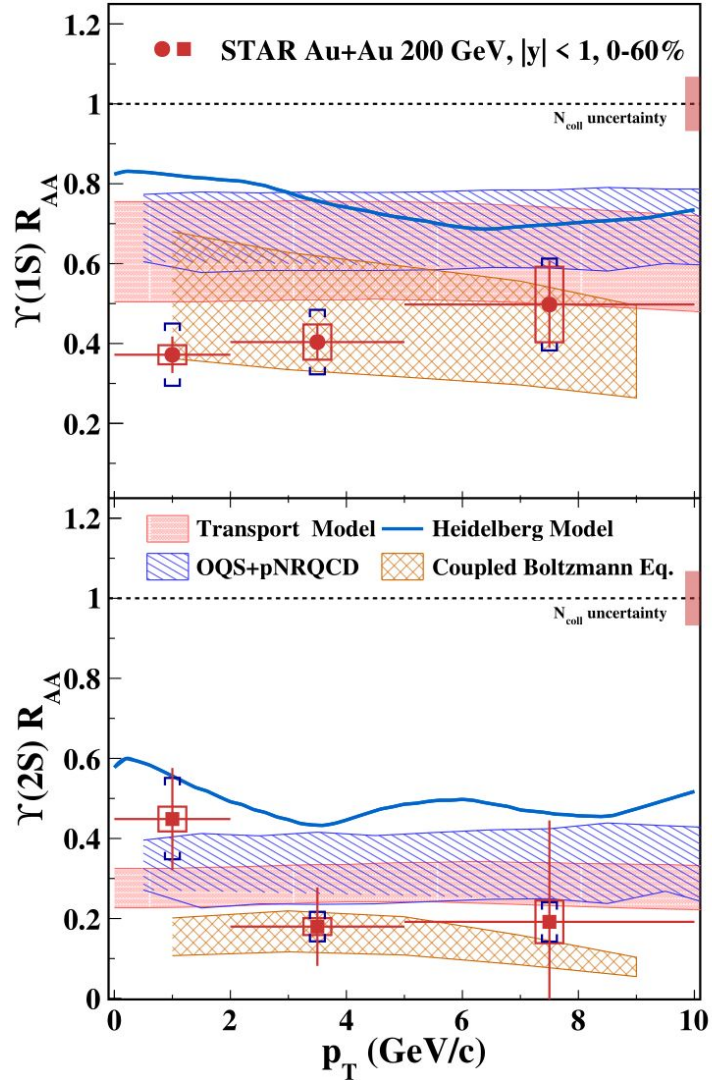
G. Wolschin et al.

[Int. J. Mod. Phys.A 35 \(2020\) 2030016](#)

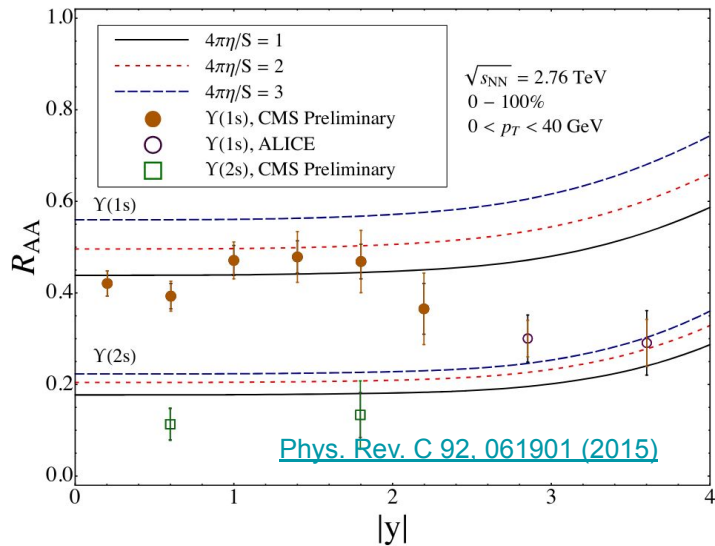


LHC Upsilon

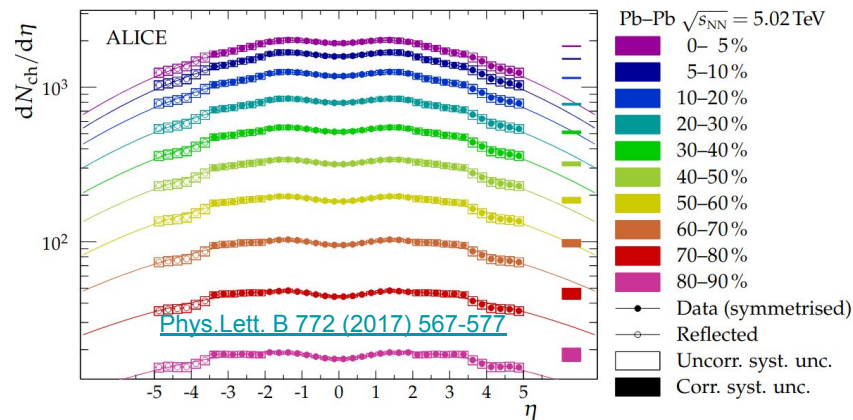
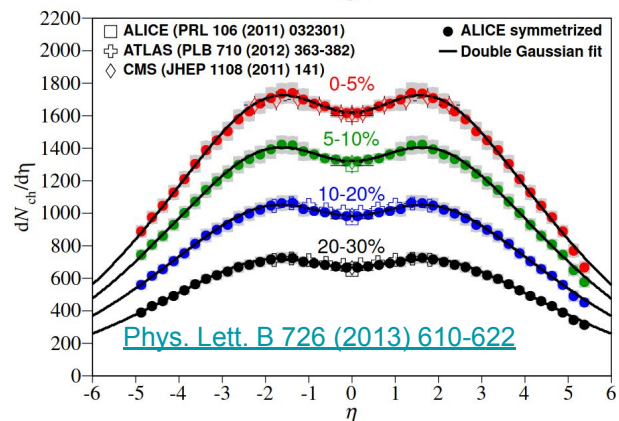
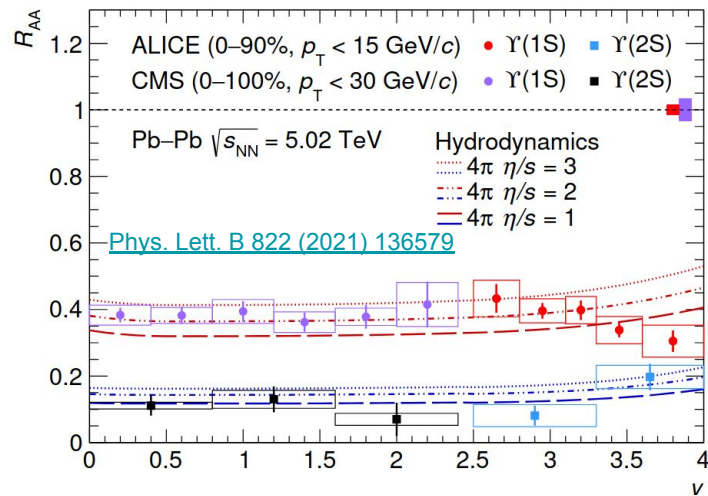
R_{AA} as p_T



2.76 TeV



5.02 TeV



2.76 TeV

5.02 TeV

